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REED CITY METEORITE.¹

FOR the early history of this meteorite I am indebted to Professor Walter B. Barrows, of the Michigan State Agricultural College, and to a clipping from an article written by Professor Barrows in the *M. A. C. Record*, published by the same institution.

This meteorite, according to Professor Barrows's statement, was found by Mr. Ernest Ruppert, a small farmer and junk dealer, on his farm in Osceola county, near Reed City, Mich., while plowing in September, 1895. Later the meteorite was displayed in a hotel window in Reed City, where Professor Barrows saw it in December, 1898, and was told there had been a dispute as to the origin of the specimen, some claiming that it was a meteor from the skies, others that it was a lump of ordinary iron. Professor Barrows saw at a glance from its general character that it was a genuine meteorite and at that time made an unsuccessful effort to obtain it for the college museum. Other attempts were equally unsuccessful, until recently when the iron was purchased by the college.

In January of this year Professor Henry A. Ward, of Chicago, visited Professor Barrows to see if he could not make arrangements to obtain a portion of the mass for the Ward-Coonley Collection of Meteorites now on deposit in the American Museum of Natural History in New York. In consequence of this visit, the mass was sent to Rochester, N. Y., for slicing.

The meteorite before cutting was a semicircular or ham-shaped mass $10 \times 21 \times 26\frac{1}{2}$ cm in its greatest diameters. One side (Fig. 1) has a comparatively smooth convex surface showing no distinct pittings; the opposite side is much more irregular in form, slightly concave, with three prominent and numerous small characteristic pittings. On the upper edge of this face is a hackly fracture oblong in shape $4\frac{1}{2} \times 10$ cm in diameter, where a piece of less than a pound, according to Professor Barrows,

¹ Read before Rochester Academy of Science, March 9, 1903.

was broken off by the finder in an effort to discover what made the "stone" so heavy. The surface of this fracture, like that of the entire mass, is much oxidized, so that the nickeliferous iron is not visible. On one edge there is a large irregular pitting some 10^{cm} long and 5^{cm} deep. The whole mass is of a reddish-

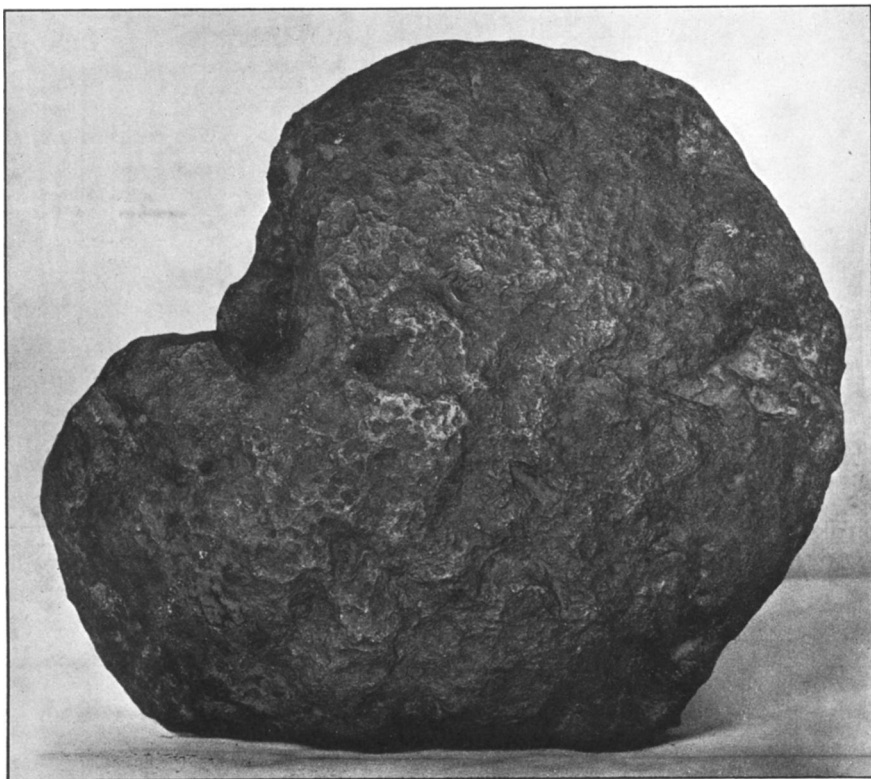


FIG. 1.—Showing convex surface. Three-fifths actual size.

brown hue, intermingled with large irregular patches of an ochre yellow color. On no part of the iron was the true crust observed. Its weight was 43 pounds 11 ounces, or 19.8 kilograms.

Following the directions of Professor Ward, a few cuts were made parallel to the upper left-hand edge (Fig. 1), showing the deep pitting mentioned above, and commencing just within the

edge of this pitting. On polishing and etching these cut surfaces, we found that the iron was octahedral in structure, with well-marked Widmanstätten figures. A feature of this iron is the fact that it etches so readily that the Widmanstätten figures were slightly outlined on an ordinary polished surface, without the use of acid or any other solvent.

The etched surfaces have numerous fissures from $\frac{1}{2}$ to $1\frac{1}{2}$ mm in width and from 5 to 65 mm in length, partly filled with

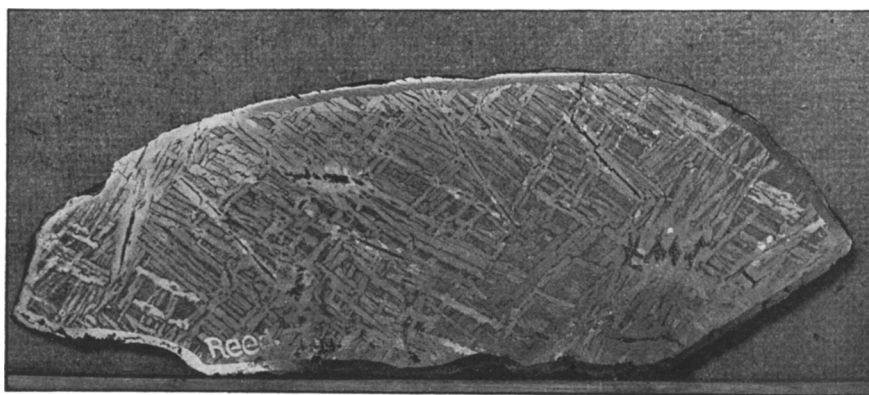


FIG. 2.—Section showing Widmanstätten figures. Three-fifths actual size.

troilite, but mainly with schreibersite. These fissures occur at various angles toward each other, thus breaking to some extent the regularity of the Widmanstätten figures, and are invariably entirely surrounded by kamacite bands. The kamacite bands average from $1\frac{1}{2}$ to 2 mm in width, with the broadest bands generally surrounding the schreibersite-filled fissures as seen in Fig. 2. The plessite patches which are quite prominent on the etched surfaces show clearly the alternating layers of kamacite and taenite (so-called Laphamite lines) a feature that was first distinguished in another Michigan iron, that of Grand Rapids. On no section were rounded troilite nodules, so characteristic of iron meteorites, found.

The character of the etched surface of this meteorite in many respects resembles that of Cuernavaca, but the kamacite blades

are much broader and longer than in Cuernavaca, thus making the figures much more prominent.

An analysis of this meteorite made for Professor Ward by Professor J. F. Whitfield, of Philadelphia, gave the following results :

Fe. 89.386.

Ni. 8.180.

Specific gravity is 7.6.

From the close proximity of the farm on which this meteorite was found to Reed City we will designate it as the "Reed City Meteorite."

The main mass of this iron was returned to the Michigan Agricultural College, while the smaller end and one slice weighing 2.9 kilograms were added to the Ward-Coonley Collection of Meteorites.

Michigan has to the present time furnished but three meteorites to the scientific world as far as described :

Grand Rapids	-	-	-	-	-	found 1883
Reed City	-	-	-	-	-	found 1895
Allegan	-	-	-	-	-	fell July 10, 1890

The first two are siderites, the last an aerolite.

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